

SHORT COMMUNICATIONS

THE BEGINNINGS OF SCIENCE IN VICTORIA

The beginnings of science in Victoria are impressive by reason of the early start in a struggling young colony, of the virility and scope of the activities, and of the high scientific standards of many of the participants. There were many strong personalities who were often in competition and sometimes in conflict. There are of course adequate reasons for all these characteristics. To understand the beginnings of science in Victoria requires some appreciation of the nature of the environment.

The area that became Victoria was at first simply a very distant pastoral district of the colony of New South Wales. From Sydney to Port Phillip was as far as from northernmost Scotland to the southern coast of England. Port Phillip was therefore very remote from Sydney, and it is not surprising that the initiative for its development came from the colony of Van Diemen's Land (Tasmania). Melbourne was not thought of until 1835 and then only in terms of a village. The pastoralists were scattered and their communications poor. They were struggling to establish themselves. Only in an economically stable township could scientific societies be effectively established. The organization of such societies is an expression of confidence in the continuity and success of the community. Two closely spaced events provided the required conditions. In 1850 the Port Phillip District was granted its independence and became a separate colony, and in 1851 gold was discovered.

Even with the lure of gold, it took considerable courage for people to leave their Home Country (probably for ever) and take the perilous six-month journey by sailing ship to the new colony. Many ships were lost and there were nearly always deaths en route even in the ships that suffered no calamity. There were many dangers in the new land, and there was always the fear of the unknown. Nor was there any assurance of economic security. Thus there was a selection factor that determined the strength of character, the drive, and the determination of the early settlers, including the scientists. It is not surprising that these strong personalities came into competition and at times into conflict. However, these same qualities account for the virility and remarkable scope of their activities.

Following the discovery of gold, Governor La Trobe requested geological assistance, and in May 1852 the geologist A. R. C. Selwyn was appointed for this purpose. This is how the Geological Survey of Victoria began. Its activities soon meant that more geologists were brought to the colony. R. Brough Smyth, who later became Secretary of Mines, and who also became the Honorary Secretary of the Philosophical Society of Victoria, migrated to the colony in 1852 when he was 22 years old. In 1853 the Gov-

ernment of Victoria decided to found an astronomical observatory. This began under the very competent direction of L. R. J. Ellery in a wooden building at Williamstown with very simple instruments. In 1858 the 'magnetic observatory' was established in the Flagstaff Gardens under another very competent person—G. Neumayr. The high standard of these and other early scientists is noteworthy. Neumayr was a foundation member of the Royal Society of Victoria. Both the Williamstown and Flagstaff Gardens sites proved to be unsuitable, so in 1863 these activities were concentrated at the Botanic Gardens. Thus the discovery of gold made a geological survey necessary, the mushroom growth of shipping made a meteorological observatory necessary, and other activities of the growing colony led to the arrival in Victoria of scientists who gradually constituted a scientific community from which scientific societies could emerge.

To understand the strange vegetation of the new colony was an obvious requirement, and so the pharmacist who became a noted botanist and explorer, Baron Sir Ferdinand von Mueller (as he ultimately became) established the National Herbarium which still functions strongly at the Royal Botanic Gardens. It is characteristic of the courage and energy of the early workers, that von Mueller immediately set out to traverse the colony and discover what its plants actually were. In 1853 he travelled to the Beechworth area and through the Buffalo Range (then practically unknown), on to the headwaters of the Goulburn River and through the La Trobe River in Gippsland, reaching Wilsons Promontory, and so ultimately back to Melbourne. This was a journey of exploration of 1500 miles, and quite a remarkable achievement. Later the same year he set off on a 1,000-mile journey through the Grampians to Albury and again east to Gippsland on the Tambo River and the Snowy River. Thus the needs and opportunities of the new colony brought together a quite remarkable group of scientific men. Economic advance meanwhile inspired confidence in the future of Victoria. Gold was a ready source of wealth, and other minerals were discovered. The pastoralists were no longer short of markets for their meat and wool. Agriculture began to develop, and there were the beginnings of secondary industries. Another expression of confidence was the construction of an elaborate Exhibition Building in William Street on the site that later accommodated the Royal Mint. The Exhibition was opened by the Governor Sir Charles Hotham, on 17th October, 1854. In this same year the colony's first railway line from Port Melbourne to the city of Melbourne was being expeditiously built, and the Town Hall was completed. In 1854 also two scientific societies were

begun, but somewhat in competition with one another. As further evidence that the young colony was scientifically on the move, we may note that in 1854 the National Museum was commenced in the Assay Office, largely through the efforts of an English army officer, Captain Andrew Clarke, R.E., who was the Surveyor-General of the colony. Some of the new museum's specimens were displayed in the Exhibition of that year. The first official appointment to the Museum staff was that of William Blandowski as zoologist. At first he had an active part in the scientific life of the community, and became a council member of the Philosophical Society. On June 27th, 1854, Blandowski set off on a scientific expedition to collect materials for the new natural history museum. In this same significant year of 1854 the new University of Melbourne was being formed, and Professor (later Sir) Frederick McCoy was appointed to the Chair of Natural History. McCoy was to become the first Director of the Museum. He is another example of the high calibre of early scientists in the colony.

Following the discovery of gold in 1851, the population of Melbourne had grown from 20,000 to 80,000 by 1854. It was only 17 years since the first land sales were held. In this city, then, two similar scientific societies were set up—the Victorian Institute for the Advancement of Science and the Philosophical Society of Victoria. W. S. Gibbons, an analytical chemist of 5 Collins Street East, and a lecturer at the Mechanics Institution, planned the former organization, which met in the Institution at which he lectured. With His Worship the Mayor of Melbourne in the chair, the Institute was inaugurated on 15th June, 1854. The aims were communication between people of scientific interest, exchange of information, a centre for the collection of observations and specimens, the development of the resources of the colony, and (characteristic of the times) 'the cultivation of a fine taste among the people of Victoria'. The laws of the Institute were based on those of the British Association for the Advancement of Science. The Governor was Patron, the Acting Chief Justice was President, Captain Clarke, Surveyor-General was Vice-President, John Maud, M.D., was Treasurer and W. S. Gibbons Honorary Secretary. The Council of nine included A. R. C. Selwyn and F. Mueller, already mentioned.

In September 1853 Captain Clarke had requested the Government to set aside a sum of money for the establishment of a museum. This the Colonial Secretary agreed to do 'if the honourable member and others who were interested in the subject, would form themselves into a committee, or initiate some society or institution which would co-operate with the Government. Captain Clarke called a meeting on 17th June 1854, and a committee was appointed to establish the Philosophical Society of Victoria. In time its simple aim was stated as 'embracing the whole field of science, with a special reference to the cultivation of those departments that are calculated to develop the natural resources of the country'. While the Victorian Institute for the Advancement of Science was modelled on the British Association, the Philosophical

Society was modelled on the Royal Society, the prospectus stating that 'after the grant of the Charter, this Society shall assume the title The Royal Society of Victoria.' The Patron was His Excellency the Lieutenant-Governor, the President was Captain Clarke, and the Vice-President was Dr G. Howitt. There were eight councillors (including Selwyn and Mueller), in addition to Dr D. E. Wilkie as Treasurer and Mr. S. Wekey as Honorary Secretary. It is interesting to note that Clarke, Selwyn and Mueller were common to the governing body of both societies. Gibbons appears to have been upset by the formation of the Philosophical Society, regarding it as a competitor started up because of the success of his Institute. However, it was soon clear that the young colony could not maintain two such societies, and the following year they were combined. Taking a word from the titles of each of the two original societies, the new one was called the Philosophical Institute of Victoria. The first meeting was held at the Museum. The new Institute was very active, studying the natural resources of the colony, the animals and plants that could be introduced with benefit, the establishment of an Astronomical Society, and the organization of a geographical expedition which ultimately resulted in the Burke and Wills Expedition. So it was that in 1859 Queen Victoria granted the title of Royal Society of Victoria. Very appropriately, the announcement was made by the Governor of Victoria, His Excellency Sir Henry Barkly, who was at that time President of the Society. He took an active part, chairing meetings and participating in discussion. Since then each Governor of Victoria has been Patron of the Royal Society of Victoria.

Another scientific beginning that merits record is that of the Zoological Society of Victoria, which was founded in October 1857. Like some of the other early scientific societies, it went through name changes, being incorporated in the Acclimatization Society in 1861, then becoming the Zoological and Acclimatization Society in 1872, and finally the Royal Zoological and Acclimatization Society in 1910. 'The objects of the Society', states a publication in 1861, 'shall be the introduction, acclimatization, and domestication of all innoxious animals, birds, fishes, insects and vegetables, whether useful or ornamental; the perfection, propagation, and hybridization of races . . .' and so on. Work began in the Richmond Paddock opposite the Botanic gardens, but 'the piece of land selected was cold, barren, and swampy,' so Mueller agreed to receive the plant specimens into his Gardens. The animals were removed to the present Zoological Gardens site in 1862.

The period was before the development of the sciences of genetics and ecology, with the result that operations were often based on erroneous ideas, with consequent failure. The nightingales, canaries, partridges and pheasants released into the local skies did not last long, nor were introductions of the Murray Cod and the 'Murray lobster' into the Yarra Yarra River a success. The attempt to grow oysters and crayfish in Lake Corangamite because it possessed a salinity similar to that of the ocean reveals the lack

of understanding of the times. However, there were successes such as introductions of the trout, the starling, the thrush, the sparrow, the rabbit and the blackberry. In view of modern experiments, it is interesting to note that Brahmin cows were introduced. Aden, Bengal and Russian sheep were also tried. McCoy, Mueller and other leading scientists of early Victoria took an interest in the work of this society.

Energetic and hopeful though the beginnings of science were in the 1850's, no one dreamed that within a century Melbourne would be a city of over 1,000,000 citizens with very numerous scientific societies.

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BOOK REVIEW

Come Wind, Come Weather. By Mary Howitt Walker. 348 pp. Melbourne University Press, 1971.

This book is the long-awaited first biography of A. W. Howitt, a legendary figure in the exploration, geology, anthropology and natural history of Australia, and particularly of East Gippsland. The title is perhaps unfortunate, since potential readers may miss the allusion to A. W. Howitt in an obscure quotation from Bunyan. The real subject matter is indicated only in a sub-title. The author, who is A. W. Howitt's grand-daughter, has used as source material unpublished letters and diaries which have been in the possession of her family but are now, Mrs. Walker states, deposited in the La Trobe Library, Melbourne.

The first Chapter, which traces the Howitt family from the time of Henry VIII in England, is possibly of family interest but not particularly relevant to the main theme. A. W. Howitt makes his first appearance in Chapter 2, born at Nottingham, England, April 17, 1830 . . . 'pink and white with a head like an egg'. But other and more pertinent pointers to the Howitt of Australia emerge from the story of his early life. His mother and father were both professional writers whose circle of friends included Wordsworth, Dickens, Tennyson. The family pre-occupation with the apt, descriptive word obviously rubbed off on Alfred. His mother, Mary Howitt, was fluent in several foreign languages: later, in Australia, Alfred became fluent in various aboriginal dialects. When the family shifted to London, 1836, young Alfred first showed that 'bent for exploration which took him wandering alone', and was once eventually located in the Zoological Gardens 'in the rhinoceros enclosure'. In 1843 the Howitt family moved briefly to Germany, where Alfred attended school in Heidelberg. His knowledge of the German language, thus early gained, facilitated his later study of microscopic petrology and his communication with the leading German workers of his day, in this field.

In 1852 Alfred's father, William Howitt, decided to make a trip to the goldfields of Australia, and to

take with him his two sons. William's interest was only partly in gold. He was very willing to pick up a fortune on the fields (without too much hard work!) but his real aim was to look at Australia and write about it, and he did this. He returned, after two years, to his literary friends in London. Chapters 3-6 are perhaps the most generally interesting in the book, with many fascinating extracts from letters of both William and Alfred Howitt describing their sea journey, Melbourne as they found it in the early 1850's, and life on the diggings. Alfred writes with a lurking Dickensian sense of fun, and apparently had in mind eventual publication. 'Ask Mr. Cassell,' he wrote to his sister in London, 'what he would give me for a set of sketches to illustrate my letters.' It was at this time, 1855, that he took up sketching. His letters were never published, but his later sketches for his geological reports are well-known.

After his father and brother returned to England, Alfred stayed on, and in Chapters 7 and 8, extracts from his letters to his family give breezy comment on the social life of Melbourne, as well as on his own activities. By 1857 he had definitely decided to stay in Australia . . . 'I am naturally a savage', he wrote . . . 'the bush is my real home'.

In explorations for gold in Victoria and for new pastoral lands in South Australia he proved himself an exceptionally good bushman, with ability to manage successfully in difficult terrain. Because of this, and of his knowledge of the dry interior of South Australia, he was chosen, 1861, to lead the Burke and Wills Relief Expedition, and the second, subsequent expedition for relief of other searching parties. These events are recounted in Chapters 9-12.

The remaining Chapters, 13-20, relate events in Howitt's personal life after his appointment, 1863, as Police Magistrate, Warden, Crown Lands Commissioner and Coroner in Gippsland. These were joint appointments, and Howitt wrote to his sister, 'I feel like a bloated pluralist'. In 1864 he married Maria ('Liney') Boothby, the daughter of an Adelaide judge and a family friend. Her own mother described Liney as a 'simple, retired and affectionate girl', but otherwise we learn little about her, except that it was a happy marriage, productive of five children.

The latter part of the book traces somewhat sketchily Howitt's advances into the fields of geology, anthropology and the natural sciences. Unfortunately it omits an account of his work as Police Magistrate, so perhaps he did not document this. We learn that after a short time in Omeo he was shifted to Bairnsdale where he bought a near-by farm property, Eastwood. 'His life was held fairly in balance between the opposing forces of the Eastwood farm and his duties as magistrate and warden which, between them, provided the family's bread and butter, although he was kept in the saddle for over seven thousand miles a year.'

Howitt's geology was self-taught. He must have learned much from his association with the mining communities; he observed, he collected rock specimens to examine in his rough-and-ready laboratory at Eastwood, and he studied his geology books even in

the saddle. Eventually his knowledge of East Gippsland geology was recognized by the Mines Department and here, as throughout his life, he was fortunate in his connections. He seems to have had an ability to make friends who respected his scholarship. Brough Smyth, the Secretary of the Department of Mines in Victoria, was his 'friend and ally', and his first geological reports were published in *The Gold Fields and Mineral Districts of Victoria*, 1869, which Brough Smyth edited. He became a Fellow of the Geological Society of London, proposed by Professor McCoy, supported by Ulrich and again, Brough Smyth. His sister Mary, in London, to whom he was very closely attached, helped him in many ways also. She sent him books, instruments for his petrological work. She even entertained at her London dinner table people who could further his progress. Such a person was Dawkins, first Professor of Geology at Owens College, afterwards the University of Manchester. 'He is very conceited but really quite intelligent', Mary wrote to her brother, 1869, 'I shall cultivate his acquaintance on your account.' Here it is amusing to note that when Howitt's major paper on the geology of North Gippsland was presented to the Geological Society of London, 1879, Professor Dawkins read it! The considerable significance of Howitt's geological work is admirably summarized in Chapter 21 by Dr. John Talent, himself an authority on Gippsland geology.

In Chapter 22 the same service is done by Dr. John Mulvaney for Howitt's work in anthropology. This assessment is welcome, since Mrs. Walker's account of the anthropological work (Chapters 17, 18) loses the general trend in details of Howitt's agreements and disagreements with other workers.

There are 5 Appendices, 2 of which give bibliographies of Howitt's publications in geology and anthropology, a helpful list of references and a satisfactory index.

The best parts of this book are the direct quotations from Alfred Howitt's own writing, mainly his letters. He had acute powers of observation and ability to translate vision into vivid prose. Even in his old age,

when he delivered the Presidential Address at the AAAS Meeting in Adelaide, 1907, on his reminiscences of Central Australia and the Burke and Wills Expedition, he retained this vitality of expression. He describes the camels forced to cross a flooded creek . . . 'as they waded through the deep mud on the other side, they drew their feet out of it with a sound like drawing a gigantic cork'. On the edge of the Stony Desert . . . 'the landscape could have been painted in sepia and Indian ink'.

From a present day perspective, some of Howitt's fascination is in his emergence as a type specimen of the virile scientist of the nineteenth century. He was a true disciple of Darwin. That he firmly believed in evolution is incidental; more important, he wanted to explore the world he lived in, examine what he discovered with the best scientific techniques he could assemble, build his theories from the collected evidence. Like many others of this time, he was a 'gentleman scientist', academically untrained, not dependent on his scientific work for his livelihood. Yet his contribution to knowledge in his chosen fields was spectacular.

Certainly he came from a sophisticated environment in England, one which recognized the importance of scholarship. But it is still amazing that in the isolated, remote East Gippsland bush, leading a very strenuous life, Howitt accomplished so much intellectually. Did the hitherto undocumented Australian environment present him with a unique chance to become known—as it did, and still does, for other scientific workers? Or was he, as his friend Sir Baldwin Spencer wrote of him, a 'great' man, a unique human being? A future study of A. W. Howitt may attempt to answer these questions; Mrs. Walker's book does not. But it is a pleasant chronicle which, in parts, makes very good reading.

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Junction Buchan and Murendal Rivers, East Gippsland, Victoria. (A. W. Howitt, 1876)